Saranthan ct al. S/N: 09/681,068

In the Claims

1. (Original) A method of acquiring free-breathing MR images comprising the steps of:

monitoring heart rate of a subject just prior to image acquisition to acquire a time period of an R-R interval;

recording the time period from the heart rate monitoring to prospectively estimate future R-R intervals; and

acquiring n sets of MR data, a first MR data acquisition commencing at any point in an R-R interval and extending for the time period recorded.

2. (Original) The method of claim 1 further comprising the steps of segmenting each MR data acquisition into n segments and repetitively acquiring each segment in n successive heartbeats.

3. (Original) The method of claim 2 further comprising the step of combining the n MR data sets to form a set of MR images with high temporal resolution covering the R-R interval.

4. (Original) The method of claim 1 further comprising the step of discontinuing heart rate monitoring before acquiring MR image data.

5. (Original) The method of claim 1 wherein a second set of MR data is acquired immediately after the acquisition of the first set of MR data.

6. (Original) The method of claim 2 wherein n=1 for fluoroscopy imaging.

7. (Original) The method of claim 1 wherein the step of acquiring MR data is performed using one of a fast gradient-recalled echo pulse sequence and a steady state free precession pulse sequence.

8. (Original) The method of claim 1 further comprising the steps of:

subjecting a patient to successively increased, graded levels of cardiac stress during the monitoring step until the heart rate is stabilized at a required stress level; and

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acquiring MR data according to the acquisition step of several long and short axis views of at least a portion of a heart muscle to monitor cardiac function during any portion of a stress test.

9. (Original) The method of claim 8 wherein the cardiac stress is induced either by physical stress or administration of a pharmaceutical.

10. (Withdrawn) A computer program for use with an MRI scanner having a computer, the computer program having a set of instruction that, when executed, cause the computer to:

receive a time-period signal indicative of an R-R interval representing a cardiac cycle of a patient;

acquire a first set of partial MR image data during a first acquisition period equal to the R-R interval;

~~acquiring a second set of partial MR image data during a second acquisition period~~

All of the claims are not present.

Called

Tamara